

Sr No.	MTech Computational Biology
1	Which term will replace the question mark in the series: ABD,DGK,HMS,MTB,SBL, ?
Alt1	ZKU
Alt2	ZKW
Alt3	ZAB
Alt4	XKW

2	Choose word from the given options which bears the same relationship to the third word, as the first two bears: Illiteracy: Education:: Flood:?
Alt1	Rain
Alt2	Bridge
Alt3	Dam
Alt4	River

3	Select the lettered pair that has the same relationship as the original pair of words: Sip : Gulp
Alt1	Touch: Push
Alt2	Cup: Class
Alt3	Tent: Hut
Alt4	Soup: Water

4	Select the lettered pair that has the same relationship as the original pair of words: Low : Cattle
Alt1	Sheep: Beef
Alt2	Gaggle: Chicken
Alt3	Grunt: Hogs
Alt4	Flock: Goat

5	Find out the number that has the same relationship as the numbers of the given pair: 8 : 81 :: 64 : ?
Alt1	125
Alt2	137
Alt3	525
Alt4	625

6	Spot the defective segment from the following:
Alt1	It's time
Alt2	the students dispersed
Alt3	to go to home
Alt4	after study hours

7	There is no ----- in our car and it is already crowded.
Alt1	room
Alt2	place
Alt3	seat

Alt4	space
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8	Newton ----- loved his pet dog very much.
Alt1	a scientist
Alt2	the scientist
Alt3	scientist
Alt4	one scientist

9	Choose the option closest in meaning to the given word: JINGOISM
Alt1	deism
Alt2	chauvinism
Alt3	extremism
Alt4	pacifism

10	Choose the antonymous option you consider the best: QUACK
Alt1	bizarre
Alt2	procurer
Alt3	charlatan
Alt4	authority

11	In a village there are 1000 persons. Out of which 800 are literates. Out of 1000,700 are criminals. There are 550 literate criminals in that village. How many Illiterate non criminals are there?
Alt1	150
Alt2	250
Alt3	50
Alt4	200

12	Average weight of A,B,C is 45; Average weight of A&B is 40; Average weight of B&c is 43, Weight of B is
Alt1	17
Alt2	20
Alt3	26
Alt4	31

13	Which of the following cannot be the Median of the three positive Integers X,Y & Z ?
Alt1	X
Alt2	Z
Alt3	X+Z
Alt4	$(X+Z)/3$

14	How many Zero's are there in the product $1*2*3*.....*10$
Alt1	2
Alt2	10
Alt3	5

Alt4	6
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15	A,B,C,D work on a project. Together A,B & C can complete in 100 days; Together B,C & D can complete in 101 days; Together C,D & A can complete in 102 days; together D,A & B can complete in 103 days . Rank them from the best to the worst performer.
Alt1	C>B>A>D
Alt2	C>A>B>D
Alt3	D>B>A>C
Alt4	D>A>B>C

16	22 Students are evenly spaced on the circumference of a big circle. They are numbered 1 to 22. which number is opposite to 17?
Alt1	8
Alt2	5
Alt3	7
Alt4	6

17	The fare of a luxury cab is Rs. X for the first five Kilometres and Rs,13/- per Kilometre thereafter. If a passenger pays Rs.2402/- for a journey of 187 kilometres, what is the value of X ?
Alt1	Rs.29
Alt2	Rs.39
Alt3	Rs.36
Alt4	Rs.31

18	An HR Company employs 4800 people out of which 45 per cent are males and 60 per cent of males are either 25 years or older. How many males are employed in that company who are younger than 25 years ?
Alt1	2640
Alt2	2160
Alt3	1296
Alt4	864

19	A person buys a shirt with marked price Rs.400/- at 20% discount. In order to make a profit of 20% the person should sell the shirt for
Alt1	Rs.400/-
Alt2	Rs.384/-
Alt3	Rs.320/-
Alt4	Rs.480/-

20	The following information is given:(i) Five friends P, Q, R, S and T travelled to five different cities of Chennai, Calcutta, Delhi, Bangalore and Hyderabad by five different modes of transport of Bus, Train, Aeroplane, Car and Boat from Mumbai. (ii) The person who travelled to Delhi did not travel by boat. (iii) R went to Bangalore by car and Q went to Calcutta by aeroplane.(iv) S travelled by boat whereas T travelled by train. (v) Mumbai is not connected by bus to Delhi and Chennai. Which of the following combinations of place and mode is not correct ?
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Alt1	Delhi — Bus
Alt2	Calcutta — Aeroplane
Alt3	Bangalore — Car
Alt4	Chennai — Boat

21	A coenzyme involved in amino acid metabolism:-
Alt1	Pantothenic acid
Alt2	Vitamin B2
Alt3	Vitamin B6
Alt4	Vitamin B12

22	The kinetic effect of purely competitive inhibitor of an enzyme:-
Alt1	Increases K_m without affecting V_{max}
Alt2	Decreases V_{max} without affecting K_m
Alt3	Decreases K_m without affecting V_{max}
Alt4	Increases V_{max} without affecting K_m

23	A worker lifts a 10 kilogram block at a vertical height of 2 meters. The work he does on the block is:-
Alt1	5 Joules
Alt2	20 Joules
Alt3	49 Joules
Alt4	200 Joules

24	The spectrum of an oil flame is an example for:-
Alt1	Line absorption spectrum
Alt2	Continuous emission spectrum
Alt3	Continuous absorption spectrum
Alt4	Line emission spectrum

25	The value of acceleration due to gravity of the surface of the earth is:-
Alt1	6 m/s ²
Alt2	9.8 m/s ²
Alt3	4.9 m/s ²
Alt4	8 m/s ²

26	The action of Vitamin K in formation of clotting factor is through:-
Alt1	Golgi complex
Alt2	Endoplasmic reticulum
Alt3	Post transcription
Alt4	Post translation

27	The maximum kinetic energy of emitted electrons in a photoelectric effect does not depend upon:-
Alt1	intensity of the radiation
Alt2	frequency of the radiation
Alt3	work function of the material

Alt4	wavelength of the radiation
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28	Two forces have magnitudes of 11 newtons and 5 newtons. The magnitude of their sum could NOT be equal to which of the following values?
Alt1	16 newtons
Alt2	7 newtons
Alt3	5 newtons
Alt4	9 newtons

29	L and D notation for chemical samples was denoted based on:-
Alt1	Emil Fischer's work
Alt2	Ramachandran plot
Alt3	IUPAC rule
Alt4	Linus Pauling and Robert Coreys prediction

30	How does the hydrophobic effect influence the structures of large molecules?
Alt1	Polar groups are oriented on the surface, interacting with the water
Alt2	Nonpolar molecules are not easily solubilized in water and aggregate & Polar groups are oriented on the surface, interacting with the water
Alt3	Nonpolar molecules are not easily solubilized in water and aggregate
Alt4	Nonpolar molecules can mask the polar characteristics of the hydrophilic molecules

31	What is the heaviest of the twenty amino acids?
Alt1	Phenylalanine
Alt2	Tyrosine
Alt3	Tryptophan
Alt4	Histidine

32	On the molar basis if DNA has 20% cytosine, then percentage of adenine would be:-
Alt1	0.2
Alt2	0.3
Alt3	0.4
Alt4	0.6

33	Which of the following gives correct correlation between wave number and wave length?
Alt1	Wavenumber = 1/wavelength in cm
Alt2	Wavelength in nanometers = 1/wavenumber
Alt3	Wavenumber = wavelength in m-1
Alt4	Wavenumber = 1/wavelength in nm

34	Chlorophyll is a naturally occurring chelate compound in which central metal is:-
Alt1	iron
Alt2	copper
Alt3	magnesium
Alt4	calcium

35	Cabohydrates are:-
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Alt1	Source of energy
Alt2	Hereditary molecules
Alt3	Made up of pyrimidines
Alt4	Made up of amino acids

36	If a capacitor of capacity C is charged with charge Q at a potential of V, then the potential energy stored in the capacitor is:-
Alt1	$\frac{1}{2} CV$
Alt2	CV
Alt3	QV
Alt4	$\frac{1}{2} QV$

37	Cerebonic acid is present in:-
Alt1	Sphingomyelin
Alt2	Esterified cholesterol
Alt3	Cerebrosides
Alt4	Triglycerides

38	Pitch of the wave is measured in terms of:-
Alt1	Amplitude of the wave
Alt2	Speed of the wave
Alt3	Time period of the wave
Alt4	Frequency of the wave

39	Nobel prize awarded for an Indian to the new findings in:-
Alt1	X-radiation for collagen
Alt2	Ultraviolet-Visible radiation
Alt3	Difference in light scattering than incident radiation
Alt4	Change in nuclear spin

40	Which pair of amino acids absorbs the most UV light at 280 nm?
Alt1	Phenylalanine & Proline
Alt2	Trp & Tyrosine
Alt3	Threonine & Histidine
Alt4	Cystein & Asparagine

41	The orbitals are not occupied by:-
Alt1	2 electrons
Alt2	3 electrons
Alt3	1 electrons
Alt4	0 electrons

42	Isomers due to Chiral carbon is called:-
Alt1	Enantiomer
Alt2	Diastereoisomer
Alt3	Chain Iso
Alt4	None of the above

43	Two amino acids combine together to give a/an:-
Alt1	Dipeptide
Alt2	Salt bridge
Alt3	Alcohol
Alt4	Acid amine

44	Which compounds are isomers?
Alt1	ethanol and methanol
Alt2	n-propanol and iso-propanol
Alt3	methanol and methanal
Alt4	ethane and ethanol

45	In which of the processes, does the internal energy of the system remain constant?
Alt1	Isobaric
Alt2	Isothermal
Alt3	Isochoric
Alt4	Adiabatic

46	SWISSPROT protein sequence database began in:-
Alt1	1988
Alt2	1986
Alt3	1987
Alt4	1985

47	Continued consumption of a diet rich in butter, red meat and eggs for a long period may lead to:-
Alt1	Hypercholesterolemia
Alt2	Kidney stones
Alt3	Vitamin A toxicity
Alt4	Urine laden with ketone bodies

48	What is C ₆ H ₆ ?
Alt1	butyne
Alt2	benzyne
Alt3	butane
Alt4	benzene

49	Hooke's law essentially defines:-
Alt1	Strain
Alt2	Stress
Alt3	Elastic limit
Alt4	Yield point

50	A motorboat covers a given distance in 6 hours moving downstream on a river. It covers the same distance in 10 hours moving upstream. The time it takes to cover the same distance in still water is:-
Alt1	7.5 hours

Alt2	8 hours
Alt3	9 hours
Alt4	6.5 hours

51	Moon has no atmosphere because:-
Alt1	It is far away from the surface of the earth
Alt2	Its is far away from the Sun
Alt3	The r.m.s. velocity of the gas molecules is more than the escape velocity of the moon
Alt4	None

52	Patients suffering from cholera are given a saline drip because:-
Alt1	NaCl is an important component of energy supply
Alt2	Na ⁺ ions help in stopping nerve impulses and hence, sensation of pain
Alt3	NaCl furnishes most of the fuel required for cellular activity
Alt4	Na ⁺ ions help in the retention of water in the body tissues

53	A stone of mass 500 gram, attached to the end of a string of length 1 m is whirled in a horizontal circle at a speed of 10 m/s. What is the tension in the string?
Alt1	25 N
Alt2	50,000 N
Alt3	50 N
Alt4	25,000 N

54	Which one is the most abundant protein in the animal world?
Alt1	Collagen
Alt2	Hemoglobin
Alt3	Trypsin
Alt4	Insulin

55	In which of the following disorders, blood has defective haemoglobin?
Alt1	Hematoma
Alt2	Hemophilia
Alt3	Hematuria
Alt4	Sickle cell anaemia

56	Proline is known as helix breaker. Cause of this break is:-
Alt1	Proline is rigid in structure
Alt2	Proline is similar to Histidine
Alt3	Proline is a hydrophilic residue
Alt4	Lack of amide hydrogen

57	The emissive power of a perfect black body is:-
Alt1	0.5
Alt2	1
Alt3	0.75
Alt4	0

58	Which of the following amino acid contain an imidazolium moiety?
Alt1	Valine
Alt2	Cysteine
Alt3	Alanine
Alt4	Histidine

59	Which of the following statements about covalently bonded molecules is false?
Alt1	Noncovalent bonds may also be present, especially if the molecule is large
Alt2	The chemical bonds that hold the molecule together are relatively strong
Alt3	Electrons are shared between the atoms that make up the molecule
Alt4	Such molecules often result from the interaction of ionized atoms

60	For a negative point charge, the electric field vectors:-
Alt1	Point radially in toward the charge
Alt2	Point radially away from the charge
Alt3	Cross at infinity
Alt4	Circle the charge

61	Trypsin does not digest after Lys/Arg when the following residue is:-
Alt1	Trp
Alt2	His
Alt3	Pro
Alt4	Ala

62	A simple pendulum is suspended from the ceiling of a lift. When the lift is at rest its time period is T. With what acceleration should the lift be accelerated upwards in order to reduce its period to $T/2$? (g is acceleration due to gravity).
Alt1	4g
Alt2	2g
Alt3	3g
Alt4	g

63	The slope of Lineweaver-Burk plot for Michaelis-Menten equation is:-
Alt1	K_m/V_{max}
Alt2	$K_m \cdot V_{max}$
Alt3	$1/K_m$
Alt4	V_{max}/K_m

64	Which of the following alcohols would be most soluble in water?
Alt1	octanol
Alt2	ethanol
Alt3	methanol
Alt4	butanol

65	Which one of the following statements is incorrect?
Alt1	Tuberculosis is highly infectious and can be spread by airborne droplets
Alt2	Tuberculosis is caused by a rod-shaped bacterium, Mycobacterium tuberculosis

Alt3	Tuberculosis can't be treated by antibiotics
Alt4	In Pulmonary Tuberculosis the elasticity of lungs is reduced

66	Which of the following hybrid is more stable?
Alt1	AATGGC TTACCG
Alt2	GACTGA CTGACT
Alt3	GATCGC CTAGCG
Alt4	ATAGGG TATCCC

67	A spring is compressed. The Potential Energy of the compressed spring:-
Alt1	remains unchanged
Alt2	increase
Alt3	becomes zero
Alt4	decrease

68	If the linear momentum of a body is doubled, then the kinetic energy of that body:-
Alt1	increases by 4 times
Alt2	increases by 2 times
Alt3	decreases by 4 times
Alt4	decreases by 2 times

69	Which of the following statements is incorrect regarding transport proteins?
Alt1	They are present in cell membranes
Alt2	They are required to transport hydrophobic steroids across cell membranes
Alt3	They serve to carry polar molecules across the hydrophobic cell membrane
Alt4	They are required to transport amino acids across cell membranes

70	An acid is:-
Alt1	Liquid that can dissolve other matter
Alt2	Chemical species that donates hydrogen ions or protons
Alt3	Chemical species that donates electron
Alt4	Chemical species that accepts hydrogen ions or protons

71	Beta pleated sheet is:-
Alt1	Tertiary protein structure
Alt2	Primary protein structure
Alt3	Secondary protein structure
Alt4	Quaternary protein structure

72	If $x = \log_2 a$, $y = \log_3 2a$ and $z = \log_4 3a$ then $xyz + 1$ is:-
Alt1	$2xz$
Alt2	$2yz$
Alt3	$2xy$
Alt4	yz

73	Microtubules are not involved directly in which of the following processes?
Alt1	maintains reticular architecture of the ER
Alt2	amoeboid motion
Alt3	motion of whole cells via flagella
Alt4	movement of mitotic spindle

74	N-Glycosyl linkage joins 1st carbon of pentose sugar with:-
Alt1	N-9 of pyrimidine
Alt2	N-9 of purine
Alt3	N-3 of purine
Alt4	N-3 of pyrimidine

75	The product of two determinants of the n th order is a determinant of the:-
Alt1	$(n + 1)$ th order
Alt2	n th order
Alt3	$(n + 2)$ th order
Alt4	$(n + 4)$ th order

76	The base pair per 3- helical turn in C-DNA is:-
Alt1	4
Alt2	28
Alt3	26
Alt4	9.33

77	Which of the following statements about histones is incorrect?
Alt1	They account for approximately one-fifth of the mass of a chromosome
Alt2	they are extensively modified after their translation
Alt3	they are highly basic because they contain many positively charged amino acid side chains
Alt4	in combination with DNA, they are the primary constituents of chromatin

78	The nucleolus is site where:-
Alt1	translation occurs
Alt2	protein recently imported from the cytoplasm are deposited
Alt3	ribosomal RNA is transcribed and ribosomes are assembled
Alt4	DNA replication occurs

79	DNA sequencing by Sangers method involves the use of:-
Alt1	ribonucleotide

Alt2	fluorodinitrobenzene
Alt3	2', 3'-dideoxyribonucleotide
Alt4	3'-deoxyribonucleotide

80	There is a slide in a park. One of its side walls has been painted in colour with a message "KEEP THE PARK GREEN AND CLEAN". If the sides of the wall are 15m, 11m and 6 m, find the area painted in colour.
Alt1	12 m ²
Alt2	$10\sqrt{2} \text{ m}^2$
Alt3	16 m ²
Alt4	$20\sqrt{2} \text{ m}^2$

81	Protein binding regions of DNA are identified by one of the following techniques:-
Alt1	southern blotting
Alt2	finger printing
Alt3	western blotting
Alt4	footprinting

82	Melting temperature (T _m) of DNA is the temperature at which:-
Alt1	50% of the DNA is denatured
Alt2	DNA melts completely
Alt3	80% of the DNA is denatured
Alt4	20% of the DNA is denatured

83	What will be the length of a chord which is at a distance of 5 cm from the centre of a circle of radius 13 cm?
Alt1	24 cm
Alt2	6 cm
Alt3	36 cm
Alt4	12 cm

84	Which of the following contributes nitrogen atoms to both purine and pyrimidine rings?
Alt1	carbamoyl phosphate
Alt2	carbon dioxide
Alt3	aspartate
Alt4	glutamine

85	A candidate is selected for interview for three posts. For the first post there are 3 candidates, for the second 4 and for the third 2. What is the probability that the candidate is selected for at least one post?
Alt1	1/4
Alt2	1/3
Alt3	1/2
Alt4	3/4

86	In given nucleic acid, G+A is not equal to C+T content. The indicates that the sample is:-
Alt1	ssDNA
Alt2	AT rich
Alt3	ds DNA
Alt4	GC rich

87	There are three events one of which must and only happen. The odds are 8:3 against A, 5:2 against B. Find the odds against C.
Alt1	43:77
Alt2	77:43
Alt3	34:43
Alt4	43:34

88	If the ratio of mode and median is 7:4, then the ratio of mean and mode is:-
Alt1	5:14
Alt2	5:12
Alt3	7:11
Alt4	4:7

89	What is the next step after discovering a faulty gate within an IC?
Alt1	repair the gate
Alt2	recheck the power source
Alt3	replace the IC involved
Alt4	resolder the tracks

90	Homonomous metamerism is observed in:-
Alt1	Molluscs
Alt2	Arthropods
Alt3	Annelids
Alt4	Echinoderms

91	Polymorphism is present in:-
Alt1	Nematoda
Alt2	Porifera
Alt3	Hydrozoa
Alt4	Mollusca

92	Foramen of Panizza, a hole between right and left aorta, is present in:-
Alt1	Snakes
Alt2	Turtles
Alt3	Crocodiles
Alt4	Lizards

93	Pseudocoelom is present in:-
Alt1	Trilobite
Alt2	Nematode

Alt3	Mollusc
Alt4	Chordate

94	Echidna is an egg laying:-
Alt1	Mammal
Alt2	Reptile
Alt3	Amphibian
Alt4	Bird

95	Which is a type of Electrically-Erasable Programmable Read-Only Memory?
Alt1	Flange
Alt2	Flash
Alt3	Fury
Alt4	RAM

96	After doing a low-level format, what would be the next step in configuring the hard drive in a system?
Alt1	Partition had disk
Alt2	Format DOS partition
Alt3	Configure DMA channel and back-up interrupt
Alt4	Install operating system

97	From what location are the 1st computer instructions available on boot up?
Alt1	CPU
Alt2	CONFIG.SYS
Alt3	boot.ini
Alt4	ROM BIOS

98	A set contains n elements. The power set of this set contains:-
Alt1	2n elements
Alt2	$2^{n/2}$ elements
Alt3	n elements
Alt4	n^2 elements

99	In a flight of 2800 km, an aircraft was slowed down due to bad weather. Its average speed for the trip was reduced by 100 km/hr and time increased by 30 minutes. Find the original duration of flight.
Alt1	3.5 hrs
Alt2	3 hrs
Alt3	2.5 hrs
Alt4	4.5 hrs

100	Each letter of the word "INDEPENDENT" is written on individual cards. The cards are placed in a box and mingled thoroughly. A card with letter "N" is removed from the box. Now find the probability of picking a card with a consonant.
Alt1	7/11
Alt2	2/5

Alt3	7/10
Alt4	3/5